植 物 分 类 学 报 32 (5): 467—479 (1994)
Acta Phytotaxonomica Sinica

中国毛茛科植物小志（十七）*

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NOTULAE DE RANUNCULACEIS SINENSIBUS (XVII)

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Abstrat One species and one variety of *Aconitum* and *Delphinium* each, one species of *Thalictrum*, one subspecies of *Adonis*, and five species of *Ranunculus* are described as new. The new finding of *Thalictrum rotundifolium* from southern Xizang is reported, and after analysing the morphological characters of leaves, stamens, and carpels, this species is considered to be more or less related to *T. scabrifolium*, a species endemic to Yunnan.

Key words Ranunculaceae; China; *Delphinium*; *Aconitum*; *Thalictrum*; *Adonis*; *Ranunculus*

摘要 在本文中描述了乌头属和翠雀属各一新种和一新亚种，唐松草属一新种，侧金盏花属一新亚种，以及毛茛属五新种；首次报道了圆叶唐松草在中国西藏南部的分布，在对叶、雄蕊和心皮的形态特征进行了分析之后认为，这种植物与特产云南的糙叶唐松草有一定亲缘关系。

关键词 毛茛科；中国；翠雀属；乌头属；唐松草属；侧金盏花属；毛茛属

1. **朗孜翠雀花** 图 1：1—3

Delphinium nangziense W. T. Wang, sp. nov. ——*D. viscosum* auct. non Hook. f. et Thoms.: Munz in Journ. Arn. Arb. **48**: 495. 1967, p. p. quoad Ludlow et Sherriff 9958.

Affine *D. hillcoatiae* Munz, quod caulibus ramosis, foliis 3-partitis, nervis subtus prominentibus, racemo 8—20-floro, floribus minoribus, calcare sepalino 1. 5—1. 7 cm longo differt. Habitu simillimum *D. viscoso* Hook. f. et Thoms., quod inflorescentia corymbosa 3—4-flora, calcare sepalino conico recedit.

Herba perennis. Caules circ. 67 cm alti, simplices, cum petiolis foliorum caulinorum inferorum sparse patuleque flavido-glanduloso-puberuli. Folia basalia ignota. Folia caulina infera longe vel longiuscule petiolata; laminae papyraceae, subreniformes vel reniformi-pentag-

* 1993-07-24 收稿。

onae, 4—4. 8 cm longae, 6—8 cm latae, basi profunde cordatae, paulo ultra medium 3-lobatae, lobo mediano cuneato-rhomboideo vel obovato-rhomboideo superne 3-lobato, lobulis

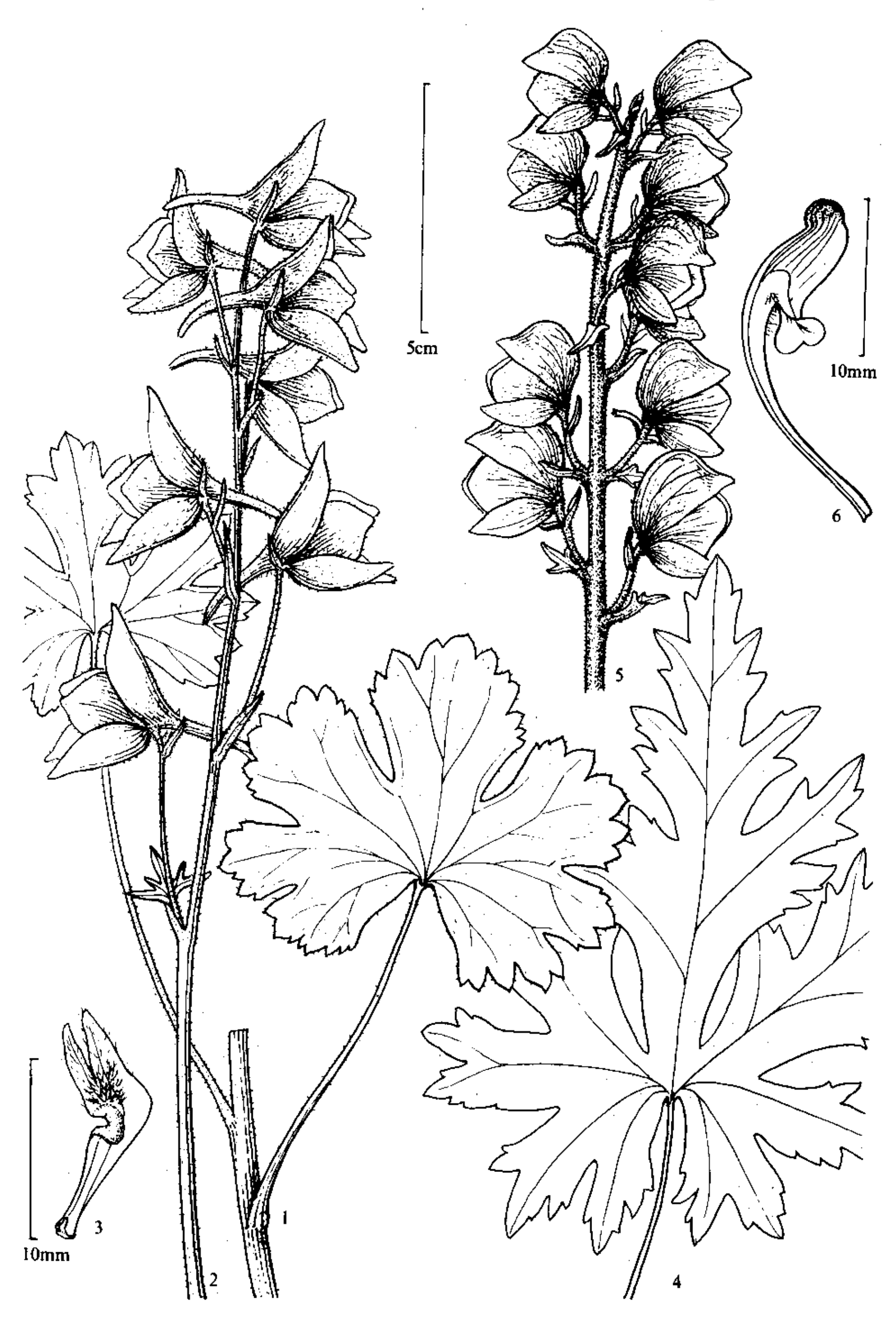


图 1 1—3. 朗孜翠雀花 1. 茎下部及二茎生叶; 2. 花序; 3. 退化雄蕊。
4—6 吉隆乌头 4. 茎生叶; 5. 花序; 6. 花瓣。

Fig. 1 1—3 *Delphinium nangziense* W. T. Wang 1. lower part of stem with two leaves; 2. inforescence; 3. staminode. 4—6. *Aconitum jilongense* W. T. Wang et L. Q. Li 4. cauline leaf; 5. inflorescence; 6. petal.

2—4-rotundato-dentatis, dentibus ovatis apice obtusis apiculatis, lobis lateralibus oblique flabellatis, prope medium inaequaliter 2-lobatis, inciso-dentatis, supra sparsissime adpresseque puberulae et glanduloso-puberulae, subtus sparse adpresseque flavido-glanduloso-puberulae, nervis supra paulo impressis subtus subplanis; petioli 4—14 cm longi. Folia caulina superna minora, breviter vaginato-petiolata, laminis subpentagonis 1—2 cm longis 2—4 cm latis basi aperte cordatis vel subtruncatis prope basin 3-partitis. Racemi terminales, 13—14.5 cm longi, 4—8-flori; bracteae infimae foliis caulinis supremis similes, ceterae lanceolato-lineares, 1—1.5 cm longae, 1.5—3 mm latae; rhachides cum pedicellis patule flavido-glanduloso-puberulae et retrorse albo-puberulae; pedicelli 1.8—4.2 cm longi, superne 2-bracteolati; bracteolae 1—8 mm a flore remotae vel flori contiguae, coerulae, lineares, 9—10mm longae, 2mm latae, ciliolatae, dorso sparse flavido-puberulae. Sepala purpureo-coerulea, late ovata, circ. 2.2 cm longa, 1.1—1.4 cm lata, prope apicem sparse flavido-puberula, calcare sepalino subulato 1.9—2.6 cm longo basi 3—4 mm crasso recto vel paulo decurvato; petala nigra, apice 2-lobata sparse pilosa; staminodia nigra, limbis ambitu suboblongis 7 mm longis 3 mm latis prope medium 2-lobatis infra medium flavo-barbatis, lobis anguste triangularibus, unguibus cuneato-linearibus 8 mm longis; stamina circ. 6 mm longa, filamentis integris; carpella 3, circ. 8 mm longa, ovariis ad suturas ventrales tantum sparse puberulis, stylis circ. 2.8 mm longis glabris. Folliculi suboblongi, 8 mm longi, 3 mm lati, ad suturas puberuli, stylis persistentibus 3 mm longis. Semina obconico-tetrahedrica, 1 mm longa.

Xizang(西藏)：Lhasa(拉萨)，Nangtze(朗孜)，alt. 4500m，in fruticetis，fl. purpureo-coerulei，1943-10-05，Ludlow et Sherriff 9958 (holotypus，BM).

本种接近毛茛叶翠雀花 *D. hillcotiae* Munz，但茎不分枝，叶3裂稍超过中部，而非深裂，叶脉下面平，不隆起，总状花序有较少（4—8朵）花，花较大，萼距较长（1.9—2.6cm），可与后者区别。在体态上，本种极似粘毛翠雀花 *D. viscosum* Hook. f. et Thoms.，但后者的花序为伞房状，非总状，有较少（3—4朵）花，萼距圆锥状，非钻形，而与本种不同。

2. **安泽翠雀花**（变种）

Delphinium grandiflorum L. var. **deinocarpum** W. T. Wang，var. nov.

A varietate typica differt carpellis glabris; a var. *leiocarpo* W. T. Wang recedit recemis haud flavo-glanduloso-puberulis.

Shanxi（山西）：Anze（安泽），Wuzhai（吴寨），1915-06-27，E. Licent 1305 (holotypus，TIE).

本变种的心皮无毛，而与模式变种不同。与光果翠雀 *D. grandiflorum* L. var. *leiocarpum* W. T. Wang 的区别在于花序不被黄色短腺毛。

3. **吉隆乌头** 图1：4—6

Aconitum jilongense W. T. Wang et L. Q. Li，sp. nov.

Ob bracteolas magnas fortasse affine *A. hicksii* Lauener，sed caulibus foliisque pu-

berulis, pedicellis brevioribus, petalis sparse puberulis diffect.

Tubera ignota. Caules 50—60 cm alti, simplex, medio sperse patenterque puberuli, inferne adpresse retrorso-puberuli. Folia caulina inferiora sub anthesi emarcida. Folia caulina mediana longe petiolata; laminae chartaceae, ambitu pentagonae, c. 10 cm longae, 13 cm latae, basi cordatae, c. 7 mm supra basin tripartitae, partitione mediana late rhomboidea apice acuminata medio 3-fida, lobis secundariis 2—3-lobatis, partitionibus lateralibus ambitu oblique flabellatis paulo ultra medium inaequaliter 2-partitis, utrinque puberulae. Racemi terminales c. 28 cm longi, multiflori; rhaches cum pedicellis retroso-puberulae; bracteae inferiores foliaceae, superiores anguste ovatae vel ovato-lanceolatae, c. 1.1 cm longae; pedicelli 1—2.3 cm longi, medio 2-bracteolatae; brateolae ovatae vel late ovatae, c. 8 mm longae, 4 mm latae. Sepala purpurea, extus puberula, superius galeatum. c. 1.2 cm altum, a basi ad apicem rostri c. 2 cm longum, breviter rostratum, rostro c. 2 mm longo, lateralia oblique lateque obovata, c. 1.3 cm longa, 1.5 cm lata, inferiora oblonga, c. 1.2 cm longa, 6 mm lata; petala sparse pilosa, c. 2.4 cm longa, limbis c. 9 mm longis, labiis c. 4mm longis apice 2-lobatis, calcaribus c. 1.5 mm longis; stamina glabra, filamentis margine integris; carpella 5, ovariis adpresse puberulis.

Xizang (西藏): Jilong (吉隆), e Sale ad Zhaxiang (萨勒至扎乡), alt. 3800m, in fruticetis alpinis, herb. 50—60 cm altae, fl. purpurei, 1990-09-04, Li Bo-sheng (李渤生), Li Hui (李辉), et Yang Yi (阳艺) 13453 (holotypus, PE).

本种花序有大的小苞片，可能接近同戛乌头 *A. hicksii* Lauener，但茎和叶被短柔毛，花梗较短，花瓣有疏毛而与后者不同。

4. **西藏瓜叶乌头**（变种）

Aconitum hemsleyanum Pritz. var. **xizangense** W. T. Wang et L. Q. Li, var. nov. ——*A. bulbiliferum* auct. non Hand. -Mazz. : Lauener in Not. R. Bot. Gard. Edinb. 25: 28. 1963.

A varietate typica differt racemis patenter puberulis, sepalis extus puberulis, petalorum calcaribus longioribus (ca. 3.5mm) circinatis. Propinquum *A. hemsleyano* var. *atropurpureo* (Hand. -Mazz.) W. T. Wang, a quo petalis glabris recedit.

Xizang(西藏): Nang xian(朗县), Migyitun, alt. 2890m, pl. 2.2—3.2m longa, perianthium et filamenta saturate purpurea, 1936-08-26, Ludlow et Sherriff 2510 (holotypus, BM).

本变种的花序被开展短柔毛，萼片外面被短柔毛，花瓣距较长（长约3.5 mm），拳卷，而与模式变种不同。在瓜叶乌头的诸变种中，本变种最接近展毛瓜叶乌头 *A. hemsleyanum* var. *atropurpureum* (Hand. -Mazz.) W. T. Wang，但花瓣无毛而与后者相区别。

5. **圆叶唐松草**

Thalictrum rotundifolium DC. Syst. Nat. **1**: 185. 1818; Prodr. **1**: 15. 1824; D. Don, Prodr. Fl. Nepal. 193. 1825; Wall. Pl. As. Rar. **11**: t. 264. 1832; Hook. f. et

Thoms. Fl. Ind. 19. 1855; et in Hook. f. Fl. Brit. Ind. **1**: 13. 1872; Lecoyer in Bull. Soc. Bot. Belg. 24, Mem.: 214. 1885; Finet et Gagnep. in Bull. Soc. Bot. France **50**: 616. 1903; Tamura & Kitamura in Kihara, Fauna & Fl. Nepal Himal. 132. 1955; Hara in Fl. East. Himal. **2**: 37. 1971; in Hara & Williams, Eunm. Flow. Pl. Nepal **2**: 22. 1979.

Xizang (西藏): Jilong (吉隆), 扎乡, 海拔 2800m, 1990-08, 李渤生, 李辉, 阳艺 13321 (PE)。

分布：我国西藏南部首次记录；尼泊尔。

圆叶唐松草具单叶，在唐松草属中其他的种均具一至数回三出复叶，所以在这个特征上，这种植物很特殊；花有 4—5 枚早落的萼片，雄蕊花丝狭线形或近丝形，全长等宽，心皮的子房狭长，变成瘦果时呈近纺锤形，每侧有 3 条纵肋，花柱短，腹面有一狭长的柱头（图 2：2）。Lecoyer (1855) 在其唐松草属专著中，将此种放在雌蕊短于萼片的 Sect. *Microgynes* 中具伸出雄蕊的 Subsect. *Longistamines* 中具狭花丝的 *Filiformes* 群中，这个群包括 *T. alpinum* L., *T. virgatum* Hook. f. et Thoms., *T. foliolosum* DC., T. saniculaeforme DC. 等形态区别很大的种类，是一个很混杂的不自然群。Finet et Gagnepain (1903) 在研究东亚唐松草属的一文中，根据花丝规则，无花柱等特征，将圆叶唐松草和与其亲缘关系较远的 *T. alpinum* L., *T. leuconotum* Franch., *T. tenue* Franch. 和 *T. cultratum* Wall. 放在同一群中。Tamura (1992) 根据圆叶唐松草 *T. rotundifolium* 建立一单型组 Sect. *Piuttia* (Matti) Tamura，并根据单叶，花丝丝形，瘦果无柄，宿存花柱较长（实际应是柱头——本文作者）等特征，将此组放在唐松草亚属 Subgen. Thalictrum 开始的第一个组的位置上，显然是认为此组是唐松草属的原始群。

在唐松草属中，花丝呈狭线形或丝形，全长等宽（如 *T. saniculaeforme* DC.），心皮的花柱腹面有不明显的柱头组织而未形成明显的柱头（如 *T. ramosum* Boivin），这些形态构造是原始的特征。在较进化的种类，花丝上部变宽，雄蕊呈倒披针形或棒形（如 *T. javanicum* Bl., *T. ichangense* Lecoy.）（王文采等，1979）。从上述情况可见圆叶唐松草的花同时具原始的（花丝近丝形）和进化的（心皮有明显柱头）特征。圆叶唐松草的叶呈心状圆形，长达 5 cm，宽达 6 cm，边缘不明显掌状浅裂，掌状基出脉 7—9 条，和细脉下面明显隆起，脉上被短腺毛（具腺毛是进化的特征）。在中国的唐松草植物中，特产云南鹤庆一带的糙叶唐松草 *T. scabrifolium* Franch. 的二回三出复叶的小叶在形状、大小、叶脉等特征方面与圆叶唐松草的叶很是相似，只是叶片下面有短硬毛，不具短腺毛而不同。在花构造方面，糙叶唐松草的雄蕊花丝上部增粗，心皮与圆叶唐松草相似，但花柱较长，顶端钩状变曲，只有明显的柱头组织（图 2：1）。其花丝上部增大为进化特征，而心皮无明显柱头，则比圆叶唐松草的心皮构造原始。根据上述叶的形态和花构造方面的特征，我们认为圆叶唐松草与糙叶唐松草有一定亲缘关系，并推测其单叶可能系由复叶演变而来，其现在喜马拉雅的分布区可能系由我国西南部山地迁移而来。

6. **云南唐松草**

Thalictrum yunnanense W. T. Wang, sp. nov. —— *T. scabrifolium* auct. non Franch.: W. T. Wang et S. H. Wang in Fl. Reipubl. Pop. Sin. **27**: 519, pl. 123, fig. 5—8. 1979.

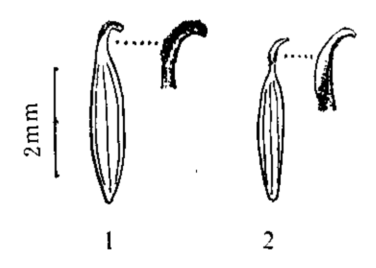


图2 瘦果 achene 1. *Thalictrum scabrifolium* (Delavay 222); 2. *T. rotundifolium* (李渤生等 13321A).

Affine *T. brevisericeo* W. T. Wang et S. H. Wang et *T. scabrifolio* Franch., illud foliolis dorso dense puberulis, pedicellis puberulis haud glanduloso-puberulis differt; hoc caulibus altioribus (c. 70 cm), foliis majoribus omnibus suborbicularibus usque ad 5 cm longis 6 cm latis, nervis basalibus 7—9, antheris apice haud apiculatis recedit.

Herba perennis. Caules 25—40 cm alti, sparse minuteque puberuli, glabrescentes, superne ramosi. Folia basalia et caulina inferiora 2—3-ternata, longiuscule petiolata; foliola papyracea vel herbacea, terminalia deltoideo-ovata, late rhomboidea vel suborbicularia, 1.3—2.2 cm longa, 1.5—2.8 cm lata, basi subcordata vel late cuneata, 3-lobata, margine incisa et sparse rotundato-dentata, utrinque ad rete nervulorum pilis rigidulis c. 0.1 mm longis tecta, dorso ad nervos basales prominetes pilis rigidulis 0.2—0.3 mm longis tecta, nervis basalibus 7, petiolulis 0.3—1.8 cm longis; petioli 5.5—7 cm longi, cum petiolulis minute puberuli. Monochasia composita terminalia axillariaque, laxa, corymbiformia; bracteae ternata vel simplicia; pedicelli graciles, 0.7—2 cm longi, minute glanduloso-puberuli. Sepala 4, albido-viridia, c. 3.5 mm longa, caduca; stamina numerosa, filamentis 3—4 mm longis superne anguste oblanceolatis inferne filiformibus, antheris oblongis c. 1 mm longis apice minute apiculatis; carpella 11—40, stylis longis. Achenia sessilia, longe ellipsoidea, c. 2.5 mm longa, 0.8 mm lata, utrinque longitudinaliter 3-costata, sparse minuteque glanduloso-puberula, stylis persistentibus 0.8—1 mm longis ventre stigmatosis apice circinatis.

Yunnan (云南): Kunming (昆明), montes occidentales (西山), templ. Huatingsi (华亭寺), alt. 2000 m, 1946-08-16, Liou Tchen-ngo (刘慎谔) 16668 (holotypus, PE); ibidem, Liou Tchen-ngo 19727; Kunming, Mons Taihuashan (太华山), Tsoong Kuan-kuang (钟观光) 2140 (PE); Binchuan (宾川), Mons Jizushan (鸡足山), Tsoong Kuan-kuang 2466 (PE).

本种在中国唐松草属志(1979, 见上引文献)中被作者等误定为 *T. scabrifolium* Franch.。本种与后者有亲缘关系,但本种的茎较矮,小叶较小,长1.3—2.2 cm,宽1.5—2.8 cm,多为正三角状卵形或宽菱形,少数近圆形,基出脉7条,花药顶端有一小尖头而不同;本种也与绢毛唐松草 *T. brevisericeum* W. T. Wang et S. H. Wang 相近缘,但本种的小叶背面被微硬毛,花梗被短腺毛,可以区别。

7. **阜平侧金盏花**(亚种)

Adonis ramosa Franch. subsp. **fupingensis** W. T. Wang, subsp. nov. ——? *A. amurensis* auct. non Regel et Radde: J. W. Wang in He, Fl. Hebei. 1: 468. 1986.

A subspecie typica differt foliorum laminis ambitu ellipticis haud triangularibus vel ovatis.

Hebei (河北): Fuping (阜平), Mei Hei touo, alt. 1500—1600m, 1929-05-26, Chanet

A390 (holotypus, TIE).

本亚种的叶片为椭圆形，非三角形，而与模式亚种不同。

据《河北植物志》主编贺士元教授告本文第一作者，承担该志毛茛科编写工作的王金维先生（不幸于数年前病故）在七十年代初到河北阜平县调查中草药资源时曾看到一种侧金盏花属植物，但未采制标本，后来将此植物定为 *Adonis amurensis* Regel et Radde 收入到河北毛茛科志中。本文第一作者于 1993 年 5 月访问天津自然博物馆，研究该馆收藏的 Licent 采的毛茛科植物标本时，发现了本亚种，并猜测王金维先生在阜平看到的侧金盏花属植物为本亚种。

8. **米林毛茛**　图 3：1—2

Ranunculus mainlingensis W. T. Wang, sp. nov. —— *R. munroanus* auct. non Drumm. ex Dunn: L. Liou in Fl. Reipubl. Pop. Sin. 28: 282. 1980.

Affinis *R. stenorhyncho* Franch., qui radicibus fibrosis haud incrassatis, foliorum laminis supra puberulis subtus glabris, petalis apice truncatis et emarginatis, carpellis paucioribus ca. 16, ovariis puberulis, acheniis oblique ovoideis puberulis facile recedit.

Herba perennis. Rhizoma breve, radices fibrosas basi incrassatas edens. Caules 4—7 caespitosi, graciles, 6.5—18 cm alti, sparse adpresseque puberuli vel glabrescentes, e parte inferiore longe ramosi vel simplices, 2-foliati. Folia basalia 3—7, ternata, longe petiolata; laminae herbaceae vel papyraceae, ambitu orbiculari-ovatae vel deltoideae, 0.9—1.4 cm longae, 1.3—2.2 cm latae, basi cordatae, foliolis petiolulatis raro sessilibus, eis centralibus flabellato-obovatis cuneatis vel late rhombicis 3-lobatis, lobis ovatis indivisis vel inaequaliter 2-lobulatis, eis lateralibus oblique flabellatis inaequaliter 2-partitis, lobis inaequaliter 2-vel 3-lobulatis, petiolulis 1.5—3.3 mm longis, utrinque glabrae vel subtus sparse puberulae, margine ciliatae vel glabrae; petioli graciles, 3—8 cm longi, glabri vel subglabri, basi anguste vaginati. Folia caulina inferiora ternata, longe petiolata, superiora minora, longiuscule vel breviter petiolata, 3-secta. Flos singulariter terminalis; receptaculum glabrum; sepala 5, naviculari-elliptica, 3—4 mm longa, extus sparse adpresse pubescentia; petala 5, lutea, elliptico-obovata, 3.8—4.8 mm longa, 1.5—2.8 mm lata, apice rotundata, basi in ungues 0.5—0.8 mm longos cuneata, foveolis nectariferis minutis; stamina 7—14, 2.2—3 mm longa, antheris oblongis 0.8—1 mm longis; carpella numerosa, 1—1.2 mm longa, glabra, stylis 0.5—0.7 mm longis. Fructus aggregati angusteovoidei, 3—7.5 mm longi, 2—3 mm crassi; receptacula fructifera subulata, 3—5 mm longa, glabra; achenia leviter bilateraliter compressa, oblique obovoidea, 1—1.2 mm longa, 0.8—1 mm lata, glabra, stylis persistentibus 0.25—0.6 mm longis.

Xizang (西藏): Mainling (米林), Daduka (大渡卡), Namula (那木拉), alt, 4300—4400m, in locis humidis convallium, fl. lutei, 1983-07-25, Li Bo-sheng, Cheng Shu-zhi et Ni Zhi-cheng (李渤生，程树志，倪志诚) 5831 (holotypus, PE); eodem loco, e Namula ad Zisubanma (兹苏班马), alt. 4300m, in pratis alpinis, fl. lutei, collectores eidem 5967 (PE); Bomi (波密), Guxiang (古乡), alt. 2700m, in pratis, folia viridia, fr. virides,

Ying Tsun-shen et Hong De-yuan (应俊生，洪德元) 1014 (PE).

在中国毛茛属志 (1980 年，见上引文献) 中，本种被误定为 *R. muroanus* Drumm. ex Dunn (叶为单叶，掌状 3 裂至中部)。本种接近细喙毛茛 *R. stenorhynchus* Franch. (产四

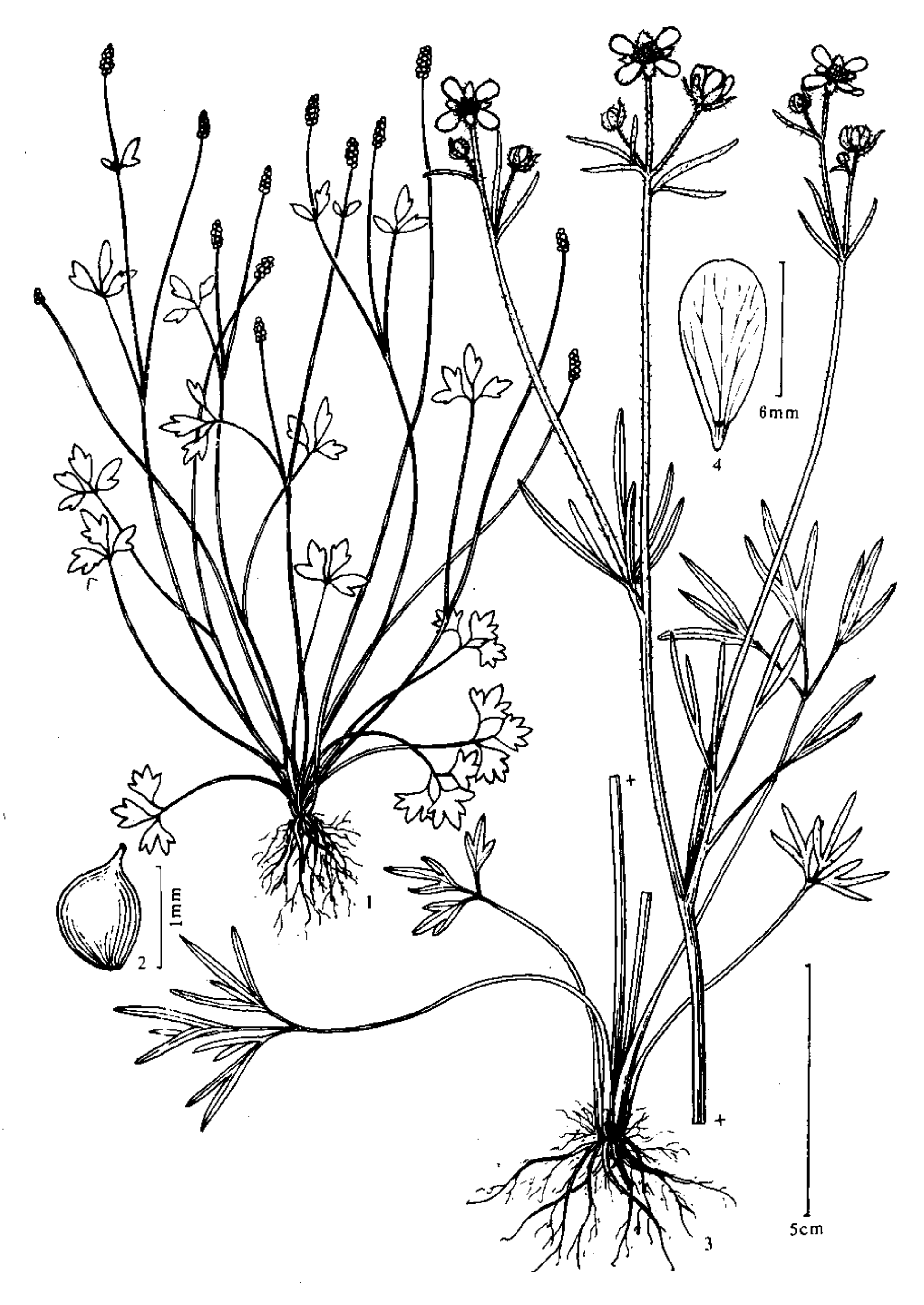


图 3 1—2. 波密毛茛 1. 植株全形；2. 瘦果。3—4. 靖远毛茛 3. 植株；4. 花瓣。
Fig. 3 1—2. *Ranunculus bomiensis* W. T. Wang 1. habit; 2. achene. 3—4. *R. jingyuanensis* W. T. Wang 3. habit; 4. petal.

川，宝兴)，但后者的须根不变粗，叶片上面被短柔毛，下面无毛，花瓣顶端截形并微凹，心皮较少，约 16 枚，子房被短柔毛，瘦果斜卵球形，被短柔毛；在本种，须根基部变粗，叶片两面无毛或下面疏被短柔毛，花瓣顶端圆形，不微凹，心皮较多，子房无毛，瘦果斜倒卵球形，无毛，可以区别。

9. **靖远毛茛**　图 3：3—4

Ranunculus jingyuanensis W. T. Wang, sp. nov.

Affinis *R. potaninii* Kom et *R. tangutico* (Maxim.) Ovcz., qui petalis 5, late obovatis, stylo subulato ovario aequilongo vel eo longiore facile descrepant.

Herba perennis. Rhizoma breve, radices fibrosas superne incrassatas edens. Caulis circ. 30 cm altus, ramosus, puberulus. Folia basalia circ. 5, ternata, longe petioata; laminae papyraceae, ambitu late rhomboideae, 2—4.2 cm longae, 2—5 cm latae, basi late cuneatae, foliolis breviter vel longe petiolulatis, eo mediano prope basin 3-partito, lobis lanceolato-linearibus 1—2 mm latis, eis lateralibus oblique rhomboideis semel vel bis inaequaliter 2-partitis, lobis ultimis lanceolato-linearibus, petiolulis 1.5—12 mm longis, supra glabrae, subtus sparse adpresso-puberulae; petioli 6—9.5 cm, sparse puberuli, basi anguste vaginati. Folia caulina breviter petiolata vel sessilia, palmatisecta, lobulis linearibus. Monochasia simplicia 2—3 terminalia axillariaque in monochasium compositum terminale 4—6-florum disposita; bracteae sessiles, 1—2.4 cm longae, 3-sectae, lobis linearibus vel anguste linearibus; pedicelli 0.5—3.8 cm longi, dense adpresso-puberuli. Flores 1.1—1.2 cm diam.; receptaculum anguste conicum, glabrum; sepala 5—7, late ovata vel late elliptica, 4—5.5 mm longa, extus adpresso-pubescentia; petala 3—4, lutea, leviter inaequimagna, anguste coneato-obovata vel anguste obovata, 4—7 mm longa, 2—3.5 mm lata, apice subtruncata, basi breviter unguiculata, foveolis nectariferis parvis; stamina numerosa, antheris oblongis; carpella numerosa, 1.2—1.8 mm longa, glabra, stylis triangularibus 0.4—0.6 mm longis ovariis 2—2.5-plo brevioribus.

Gansu(甘肃): Jingyuan(靖远), Mons Qiuwushang(蚰蜈山), alt. 1800m, ad apicem montis, fl. lutei, 1956-07-15, Exped. Huanghe. (黄河队) 5350 (holotypus, PE).

本种于川滇毛茛 *R. potaninii* Kom. 和高原毛茛 *R. tanguticus* (Maxim.) Ovcz. 相近缘，但本种花有 3—4 枚花瓣，花瓣楔状狭倒卵形，花柱三角形，长 0.4—0.6 mm，比子房短 2—2.5 倍，可以区别；在后二种，花有 5 枚宽卵形花瓣，花柱钻形，与子房等长或比子房长。

10. **昌平毛茛**　图 4：1—3

Ranunculus changpingensis W. T. Wang, sp. nov.

Affinis *R. cuneifolio* Maxim., qui caule graciliore 1.2—3.5 mm crasso 3—5-foliato, foliis ambitu late rhombicis basi late cuneatis, lobis lateralibus 2-lobatis vel 2-lobulatis distinguitur.

Herba perennis. Rhizoma breve. Caulis robustus, ca. 70 cm altus, 5mm crassus, cum petiolis dense strigulosus, 8-foliatus, superne ramosus. Folium basale 1, longe petiolatum;

lamina subcoriacea, depresse pentagona, ca. 8.8 cm longa, 10 cm lata, basi truncata vel truncato-cuneata, 3-partita, lobo centrali anguste cuneato ca. 2 cm lato apice acuto superne

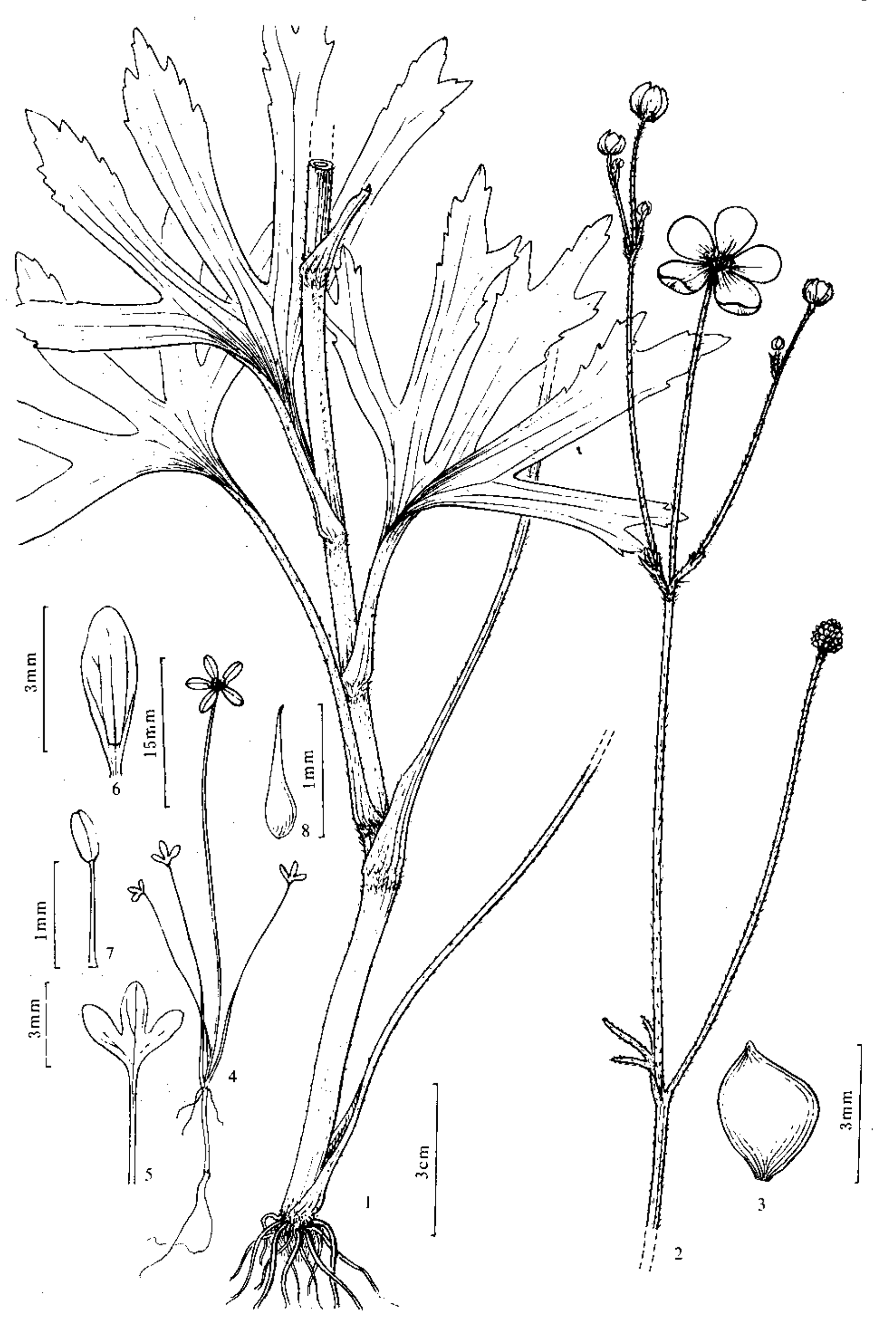


图4 1—3. 昌平毛茛 1. 植株下部；2. 花序；3. 瘦果。4—8. 四蕊毛茛
4. 植株全形；5. 基生叶；6. 花瓣；7. 雄蕊；8. 心皮。

Fig. 4 1—3. *Ranunculus changpingensis* W. T. Wang 1. lower part of the plant; 2. inflorescence; 3. achene.
4—8. *R. tetrandrus* W. T. Wang 4. habit; 5. basal leaf; 6. petal; 7. stamen; 8. carpel.

3-lobato et parce denticulato, lobis lateralibus oblique lateque cuneatis inaequaliter paulo ultra medium 2-partitis, lobulis linearibus 0.7—1 cm latis superne inconspicue inaequaliterque 2-lobatis et parce denticulatis, utrinque strigulosae, nervis subtus prominentibus; petiolus ca. 17 cm longus, basi vagina amplexicauli lanceolata 4 cm longa 7 mm lata praeditus. Folia caulina eo basali similia, gradatim diminuentia. Monochasium compositum terminale ca. 20 cm longum, 9-florum; bracteae inferiores foliaceae, breviter petiolatae, superiores sessiles, lineares, 0.5—2 cm longae; pedicelli 1.5—8 cm longi, dense strigulosi; receptaculum glabrum; sepala 5, elliptica, ca. 6.5 mm longa, extus pilosa; petala 5, lutea, late obovata, 13 mm longa, 8—10 mm lata, apice rotundata, foveolis nectariferis squamis transversaliter anguste oblogis ca. 0.6 mm longis 1.1 mm latis donatis; stamina numerosa, 3.5—4.5 mm longa, antheris anguste oblongis 1 mm longis; carpella numerosa, ca. 1.5 mm longa, stylis ca. 0.2 mm longis. Fructus aggregati globosi, 5 mm in diametro; achenia bilateraliter compressa, oblique lateque obovata, 2.2—2.5 mm longa, 2 mm lata, glabra, stylis persistentibus deltoideis 0.3—0.4 mm longis.

Beijing (北京): Changping (昌平), Baishan (百善), prope rivulos in campo, 1972-07-18, Kuan Ke-chien, Zhou Fu-rong et al. (关克俭，周福荣等) 309 (holotypes, PE; isotypus IMD).

本种接近楔叶毛茛 *R. cuneifolius* Maxim.，但后者的茎较细，粗 1.2—3.5 mm，有 3—5 枚叶，叶轮廓宽菱形，基部宽楔形，侧裂片 2 浅裂或不明显微 2 裂；在本种，茎粗壮，粗 5 mm，有 8 枚叶，叶轮廓扁五角形，基部截形或截状楔形，侧裂片 2 深裂超过中部，可以区别。

11. **四蕊毛茛**　图 4：4—8

Ranunculus tetrandrus W. T. Wang, sp. nov.

Proximus *R. muscigeno* W. T. Wang, qui caule 1—2-foliato, foliis flabellato-obovatis vel rhombico-obovatis 3-lobatis, floribus minoribus 3 mm in diametro, petalis ellipticis 1.5 mm longis nervos basales tres coeruleos simplices rarissime laterales 1-ramosos ferentibus, stylis 3—4-plo brevioribus 0.2 mm longis facile abhorret.

Herba annua, minuta, ca. 3.5 cm alta , tota glabra, inter caespites muscorum crescens. Folia ca. 3, omnia basalia, longe petiolata; laminae chartaceae vel subcoriaceae, ambitu late rhombidae vel late trapezoideo-ovatae, 2—2.5 mm longae, 1.8—2.5 mm latae, basi late cuneatae vel truncato-cuneatae, plerumque 3-partitae vel 3-sectae, segmentis obovato-oblongis vel obovato-linearibus apice obtusiusculis indivisis vel lateralibus inaequaliter 2-lobatis, raro prope medium 3-fidae, lobis ovatis integris; petioli 1.4—2.2 cm longi, basi anguste vaginati. Scapus gracilis, ca. 3.5 cm altus, nudus. Flos terminalis, ca. 6 mm in diametro; sepala 5, obovato-oblonga, 2.2—2.6 mm longa, 0.8—0.9 mm lata, apice rotundato-truncata; petala 5, lutea, anguste obovata vel oblongo-obovata, 3—3.8 mm longa, 1.2 mm lata, apice rotundata, basi in ungues breves latosque cuneata, trinervia, nervis incoloratis lateralibus 3-ramosis, supra basin foveolis nectariferis minutis praedita; stamina 4,

1. 8—2 mm longa, antheris oblongis 0. 6 mm longis; carpella ca. 20, 0. 8—1. 4 mm longa, ovariis 0. 3—0. 5 mm longis, stylis subulatis 0. 6—0. 8 mm longis. Fructus aggregati late ovoidei, ca. 2. 2 mm longi, 3 mm lati; receptacula subteretia, 1. 2 mm longa; achenia leviter bilateraliter compressa, oblique obovoidea, ca. 1 mm longa, 0. 7 mm lata, laevia, stylis persistentibus ca. 0. 7 mm longis.

Xizang (西藏): Mainling (米林), Paiqiu ((派区), Daduka (大渡卡), Nala (那拉), alt. 4500 m, in pratis prope flumen glaciale, herba 1 cm alta, fl. lutei, 1983-07-26, Li Bo-sheng, Cheng Shu-zhi et Ni Zhi-cheng (李渤生, 程树志等) 5842 (holotypus, PE).

本种与藓丛毛茛 *R. muscigenus* W. T. Wang 相近，二者均为特产于米林山区草甸或阴湿草地苔藓群落中的一年生小草本植物，茎、叶、花部和瘦果均无毛，最独特的是，二者花的雄蕊都只有 4 枚，这种现象在具多数雄蕊的毛茛属，以及毛茛科中都是罕见的。其祖先可能分布在米林之东的横断山区。藓丛毛茛的茎有 1—2 叶，叶扇状倒卵形或菱状倒卵形，3 浅裂，花直径 3 mm，花瓣椭圆形，长 1. 5 mm，有 3 条蓝色不分枝的脉，稀侧基生脉有 1 条分枝，花柱比本种的短 2—4 倍，长 0. 2 mm 可与本种区别。

12. **叉裂毛茛** 图 5

Ranunculus furcatifidus W. T. Wang, sp. nov.

Affinis *R. potaninii* Kom. et *R. brotherusii* Freyn, hic plantis multo altioribus (usque ad 35 cm altis), foliis utrinque glabris, lobis lateralibus profundius divisis, lobulis anguste lanceolatis, receptacuo glabro differt; ille foliis basalibus vulgo minoribus ambitu pentagonis vel orbiculari-ovatis basi saepe cordato-truncatis, lobis lateralibus oblique flabellatis, receptaculo vulgo glabro recedit.

Herba perennis. Rhizoma breve, radices fibrosas edens. Caules 4—18 cm alti, ramosi, adpresse puberuli. Folia basalia circ. 5, longe petiolata; laminae papyraceae, ambitu late rhomboideae, raro triangulares, 1—2. 5 cm longae, 0. 7—2. 3 cm latae, basi late cuneatae, raro subtruncatae, 3-partitae vel fere 3-sectae, lobo mediano oblongo-oblanceolato vel lineari vulgo indiviso vel supra medium uno latere vel utrinque l-lobulato, lobis lateralibus oblique lanceolatis indivisis vel oblique cuneatis inaequaliter 2 (—3) -lobulatis, lobulis anguste ovatis vel anguste triangularibus, supra glabrae, subtus adpresse puberulae; petioli 1. 5 cm longi, adpresse puberuli, basi anguste vaginati. Folia caulina breviter petiolata vel sessilia, 3-secta, lobis linearibus vel anguste linearibus. Flores singulariter terminales, 5. 5—1. 2 mm diam.; sepala 5, oblongo-elliptica vel late elliptica, 2. 5—4. 2 mm longa, extus adpresse albo-puberula; petala 5, lutea, elliptico-obovata, 3—5 (—6) mm longa, 2—3 mm lata, apice rotundata, brevissime unguiculata, foveolis nectariferis parvis; stamina numerosa, antheris oblongis. Fructus aggregati oblongo-ovoidei, 4—7 mm longi, 2. 5—4 mm crassi; receptacula albo-puberula; achenia paulo bilateraliter compressa, anguste obovoidea vel oblique obovoidea, circ. 1 mm longa, 0. 5—0. 7mm lata, glabra, stylis persistentibus circ. 0. 4 mm longis.

Xizang (西藏): Pulan (普兰), alt. 3900m, in ripis rivulorum, fl. lutei, 1976-07-12,

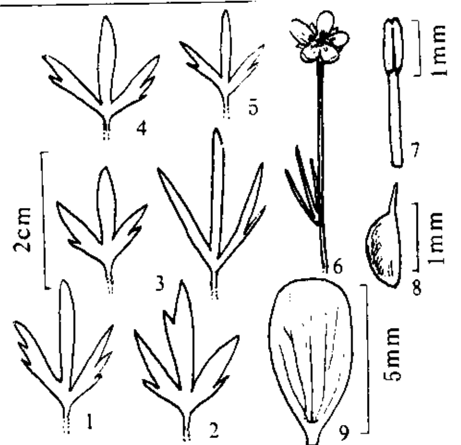


图 5　叉裂毛茛 1—5. 基生叶；6. 植株上部，示最上部茎生叶和顶生花；7. 雄蕊；8. 瘦果；9. 花瓣。（1，6—9. 自青藏队 76-8417，2. 自青甘队 2611，3. 自应俊生 4547，4. 自王启无 61445，5. 自杨昌友等 810103）

Fig. 5 *Ranunculus furcatifidus* W. T. Wang 1—5. basal leaves; 6. upper part of plant, showing the uppermost leaf and the terminal flower; 7. stamen; 8. achene; 9. petal. (1 and 6—9 from Qinghai-Xizang Expedition 76-8417, 2 from Qinghai-Gansu Expedition 2611, 3 from Ying Tsun-shen 4547, 4 from Wang Chi-wu 61445, 5 from Yang Chang-you et al. 810103)

Exped. Qinghai-Xizang.（青藏队）76-8417 (holotypus, PE), 76-114 (PE); Chaya（察雅）, Jitang（吉塘）, alt. 3700m, in declivitatibus, Exped. Qinghai-Xizang. 76-12990 (PE); Jilong（吉隆）, alt. 4150 m, Exped. Qinghai-Xizang. 75-7081 (PE); Nyingchi（林芝）, Seqila（色齐拉）, alt. 3800m, Yao Gan et al.（姚淦等）3194 (NAS); Jomda（江达）, Mons Milashan（米拉山）, alt. 4800m, Zhang Yong-tian et Lang Kai-yong（张永田，郎楷永）1040 (PE). **Sichuan**（四川）: Kangding（康定）, Xinduqiao（新都桥）, alt. 3500m, in pratis palustribus, fl. lutei, Kuan Ke-chien, Wang Wen-tsai et al.（关克俭，王文采等）927 (PE); Garze（甘孜）, templum Dajinsi（大金寺）, alt. 3500m, in pratis palustribus, herbae 12 cm altae, fl. lutei, Ying Tsun-shen（应俊生）4547 (PE). **Qinghai**（青海）: Guide（贵德）, alt. 2700m, in locis glareosis, fl. lutei, He Ting-nong（何廷农）856 (PE); Menyuan（门源）, Xiaolaergou（小拉儿沟）, alt. 1500m, prope rivulos in convallibus, fl. lutei, nitidi, Exped. Qinghai-Gansu. Acad. Sin.（中科院青甘队）2611 (PE). **Xinjiang**（新疆）: Ruoqiang（若羌）, alt. 4300m, in pratis alpinis, S. G. Wu, H. Ohba et al. 4146 (KUN); Hejing（和静）, alt. 3400m, Yang Chang-you et al.（杨昌友等）810103 (PE, XJA). **Hebei**（河北）: Mons Xiaowutashan（小五台山）, alt. 2400m, fl. lutei, Wang Chi-wu（王启无）61445 (PE).

本种接近滇川毛茛 *R. potaninii* Kom.，但后者植株较高，高达 35 cm，叶两面均无毛，侧裂片深裂，小裂片狭披针形，花托无毛，而与本种不同；本种也与鸟足毛茛 *R. brotherusii* Freyn 相近缘，但后者的基生叶较小，轮廓五角形或圆卵形，基部心状截形，侧裂片斜扇形，花托通常无毛，可与本种区别。

致谢　承天津自然博物馆（TIE）、中国医学科学院药用植物资源开发研究所（IMD）、中国科学院昆明植物研究所（KUN）、江苏植物研究所（NAS）和八一农学院林学系（XJA）或热情接待，或惠借标本，张春方同志为本文绘图（图 1，3，4），作者表示衷心感谢。

We are grateful to the director and curator of the British Museum (Natural History) for the herbarium material kindly sent on loan.

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